

CLAIMS:

1. A method for reducing the risk of bacterial infection or sepsis in a susceptible patient comprising treating the susceptible patient with a pharmaceutical composition containing bacteriophage of one or more strains which produce lytic
5 infections in pathogenic bacteria.
2. The method of claim 1, wherein treatment of the patient reduces the level of colonization with pathogenic bacteria susceptible to the bacteriophage by at least one log.
3. The method of claim 1, wherein the susceptible patient is an
10 immunocompromised patient selected from the group consisting of leukemia patients, lymphoma patients, carcinoma patients, sarcoma patients, allogeneic transplant patients, congenital or acquired immunodeficiency patients, cystic fibrosis patients, and AIDS patients.
4. The method of claim 1, wherein the susceptible patient is colonized with the
15 pathogenic bacteria subject to infection by said bacteriophage.
5. The method of claim 1, wherein the pathogenic bacteria are selected from vancomycin-resistant enterococcus (VRE), pneumococcal species, methicillin-resistant *Staphylococcus aureus*, multi-drug resistant *Staphylococcus aureus* (MDRSA), multi-drug resistant *Pseudomonas* species, *Nesseria* sp., *Hemophilus* sp.,
20 *Proteus* sp., *Klebsiella* sp. and *Esherichia coli*.
6. The method of claim 5, wherein the pathogenic bacteria are selected from VRE, MDSA, and multi-drug resistant *Pseudomonas*.
7. The method of claim 1, wherein the bacteriophage composition is selected from a parenteral composition, an oral tablet, capsule or liquid, a nasal aerosol, a
25 throat wash, a toothpaste, and a topical ointment.
8. The method of claim 1, wherein the patient has a wound selected from an ulcer, a laceration, a deep penetrating wound and a surgical wound, the

bacteriophage produce lytic infections in pathogenic bacteria capable of infecting these wounds.

9. The method of claim 8, wherein the composition is a topical ointment, an irrigation solution or a component of a wound dressing.

5 10. The method of claim 1, wherein the pharmaceutical composition contains a plurality of bacteriophage strains.

11. The method of claim 10, wherein the pharmaceutical composition contains bacteriophage strains which produce lytic infections in pathogenic bacteria of a plurality of bacterial strains.

10 12. The method of claim 10, wherein the pharmaceutical composition contains bacteriophage strains which produce lytic infections in pathogenic bacteria of a plurality of bacterial species.

13. A method for reducing the incidence of infection by selected bacteria in a medical facility comprising administering a bacteriophage preparation which
15 reduces the colonization level by the selected bacteria in patients at risk for infection by the selected bacteria who are admitted to said medical facility.

14. The method of claim 13, wherein the patients at risk for infection are selected from the group consisting of leukemia patients, lymphoma patients, carcinoma patients, sarcoma patients, allogeneic transplant patients, congenital or
20 acquired immunodeficiency patients, cystic fibrosis patients, and AIDS patients.

15. The method of claim 13, wherein said bacteriophage is administered to substantially all patients admitted to said medical facility.

16. The method of claim 13, wherein said bacteriophage is administered to substantially all patients colonized with the selected bacteria who are admitted to
25 said medical facility.

17. The method of claim 13, wherein the selected bacteria is VRE, MDRSA, or multi-drug resistant *Pseudomonas*.

18. A method for reducing the incidence of VRE infection in a medical facility comprising administering a bacteriophage preparation which reduces the number of VRE in experimentally infected mice by at least 1 log to patients at risk for VRE infection who are admitted to said medical facility.
- 5 19. The method of claim 18, wherein the patients at risk for VRE are selected from the group consisting of leukemia patients, lymphoma patients, carcinoma patients, sarcoma patients, allogeneic transplant patients, congenital or acquired immunodeficiency patients, cystic fibrosis patients, and AIDS patients.
20. The method of claim 181, wherein said bacteriophage is administered to
10 substantially all patients admitted to said medical facility.
21. A method for reducing the incidence of VRE infection in a medical facility comprising applying a composition containing a bacteriophage preparation which reduces the number of VRE in experimentally infected mice by at least 1 log to a plurality of articles in said medical facility, said articles selected from the group
15 comprising beds, chairs, wheel chairs, gurneys, surgical tables, operating room floors, operating room walls, surfaces in an intensive care unit, as well as electronic patient monitoring and therapy equipment including electrocardiographs, respirators, cardiovascular assist devices such as intraaortic balloon pumps, infusion devices, televisions, remote controllers, monitors, and telephones.
- 20 22. The method of claim 21, wherein said step of applying is repeated periodically, at intervals ranging from multiple daily applications to bi-weekly applications.
23. The method of claim 22, wherein said step of applying is repeated periodically, with the period ranging from three times daily to semi-weekly.
- 25 24. A lytic bacteriophage which infects *Enterococcus*, wherein no more than 30% of the *Enterococcus* strains in a collection of more than 100 genetically diverse vancomycin resistant *Enterococcus* (VRE) strains are resistant to infection by said bacteriophage.

25. The bacteriophage preparation of claim 24, wherein the bacteriophage produces lytic infection in at least 200 genetically diverse VRE isolates.
26. A bacteriophage preparation which reduces the number of VRE in experimentally infected mice by at least 1 log.
- 5 27. A lytic bacteriophage which infects *Staphylococcus aureus*, wherein at least 70% of the *Staphylococcus aureus* strains in a collection of more than 100 genetically diverse MDRSA strains are not resistant to infection by said bacteriophage.
- 10 28. A lytic bacteriophage which infects *Pseudomonas* sp., wherein at least 70% of the *Pseudomonas* strains in a collection of more than 100 genetically diverse multi-drug resistant *Pseudomonas* strains are not resistant to infection by said bacteriophage.